ABSTRACT

Improved triangle management in triangular meshes uses a data structure having two fields to store data for each triangle in the triangular mesh. The first field is a set of three vertices for the triangle and the second field is a set of three edges, each edge corresponding to one of the three vertices. Each of the three edges is an identification of a next or subsequent edge that is encountered when performing a traversal (e.g., in a counterclockwise direction) about the corresponding vertex. According to one aspect, three operators are defined to assist in management of the triangular mesh. These operators are a make edge operator, a splice operator, and a swap operator, and are selectively invoked to both add triangles to the triangular mesh and remove triangles from the triangular mesh.